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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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08/947,221    10/08/97    CHAKRABARTI    S    AM9-97-120

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EXAMINER

LE, U

ART UNIT

PAPER NUMBER

2771

DATE MAILED: 06/20/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No.

08/947,221

Applicant(s)

CHAKRABARTI ET AL.

Examiner

Uyen T Le

Art Unit

2771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
  2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
  3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's appeal brief filed March 27, 2000 is acknowledged. Applicant's arguments regarding Deerwester and Barrett references have been fully considered but they are moot in view of the new ground(s) of rejection presented in this Office Action.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 12, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Shoham (US 5,855,015).

Regarding claim 12, Shoham discloses a method for eliciting useful information from first and second resources including the step of obtaining first and second collections of entities (see the abstract, Figure 3). The claimed act of obtaining affinity values not constrained to be symmetric for each entity merely reads on the fact that hyperlink information resources are represented as a directed graph in the method of Shoham (see Figure 2). The claimed significance values merely read on the fact that in one embodiment, weights are given to objects in a resource (see column 10, lines 5-25). The claimed act of iteratively calculating updated significance values until a predetermined condition is reached is met when Shoham shows that a limited-breadth search similar to a best-first iterative broadening technique is used in the search (see column 9, lines 51-56). Furthermore, it is clear that iteration necessitates initialization of

the significance values as claimed.

Regarding claim 13, Shoham discloses that the affinity values are not being based on content of the entities alone when Shoham shows that other features than weight may be utilized to characterize a particular information resource (see column 10, lines 26-41).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deerwester (US 5,778,362), in view of Microsoft Press Computer Dictionary, Third Edition, page 240.

Regarding claim 1, Deerwester discloses a method for eliciting useful information from first and second collections of entities including the steps of obtaining the entities (see the abstract and column 1), obtaining affinity values (see column 2, lines 1-32). Deerwester also discloses that iteration is used for relevance feedback until the results stabilize within a predetermined threshold or are deemed to satisfy users' criteria (see column 7, line 50-column 8, line 11). Significance values read on relevance values of Deerwester. Besides, it is clear that iteration necessitates initialization of the significance values as claimed. Deerwester explicitly shows that the invention can be used on the Internet (see column 8, line 65- column 9, line 5). Furthermore, Deerwester

explicitly shows the use of URLs (see column 10, lines 26-37). Although Deerwester does not specifically show that hyperlinks are established between at least some of the entities, it is well known in the art that URLs are a form of link used in locating connections between related entities on the Internet (see the definition of URL and hyperlink at pages 240, 487 of the Microsoft Press Computer Dictionary). Therefore, it would have been obvious to one of ordinary skill in the art to include hyperlinks relating entities when implementing the method of Deerwester on the Internet in order to show the connection between closely related entities. Clearly, at least one affinity value depends on at least in part on at least one hyperlink since hyperlinks are linking related entities retrieved by a search engine.

Regarding claim 2, the step of obtaining affinity values read on the values of the discrimination vector  $d$  where a large positive value indicates that the correspondent term occurred much more frequently than expected and a  $-1$  indicates that the term did not occur at all (see column 5, lines 30-50).

Regarding claims 3-4, Deerwester discloses the concept of a single set of entities, wherein affinity values are obtained for respective entities in the single set (see column 2, lines 1-7, 11-12, 16-32).

Regarding claim 5, the raw affinity values read on the scalar values disclosed by Deerwester in the calculation of derived affinity values for similarity measures (see column 1, line 60-column 2, line 50).

Regarding claim 6, Deerwester discloses the use of MIN and SUM operations in the step of deriving affinity values (see column 6, lines 46-50).

Regarding claim 7, the step of computing similarity values read on the calculation of similarity measures of Deerwester (see column 6, lines 35-62). Furthermore, calculating updated significance values clearly involves previous significance values and affinities as claimed.

Regarding claims 8-9, the iterated principal affinity component values read on the non-principal eigen vectors of the similarity matrix in the method of Deerwester (see column 6, line 60).

Regarding claim 10, Deerwester discloses updating the similarity matrix to obtain the useful information (see column 6, lines 46-60). Clearly the similarity matrix includes updated non-principal eigen vectors of the similarity matrix.

Regarding claim 11, Deerwester discloses the step of obtaining a cluster (see column 6, line 63-column 7, line 9).

### ***Conclusions***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosures.

Wical (US 5,940,821) teaches information presentation in a knowledge base search and retrieval system.

Ogawa (US 5,535,382) teaches a document retrieval system involving ranking of documents in accordance with a degree to which the documents fulfill a retrieval condition corresponding to a user entry.

Vaithyanathan et al (US 5,619,258) teach a method and apparatus for automatically generating hierarchical categories from large document collections.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uyen Le whose telephone number is (703) 305-4134. The examiner can be reached on Monday through Thursday from 7:00am to 5:30pm.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703)305-9707.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington D.C. 20231

**or faxed to:** (703)308-9051, (for formal communications intended for entry)

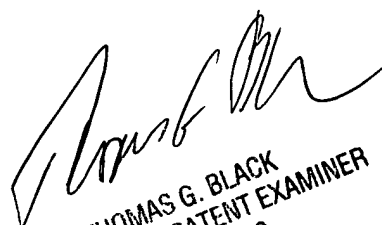
**or:** (703)308-5399 (for informal or draft communications, please label "PROPOSED" or DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone is (703)305-3900.

UL

June 16, 2000

  
THOMAS G. BLACK  
SUPERVISORY PATENT EXAMINER  
GROUP 2700